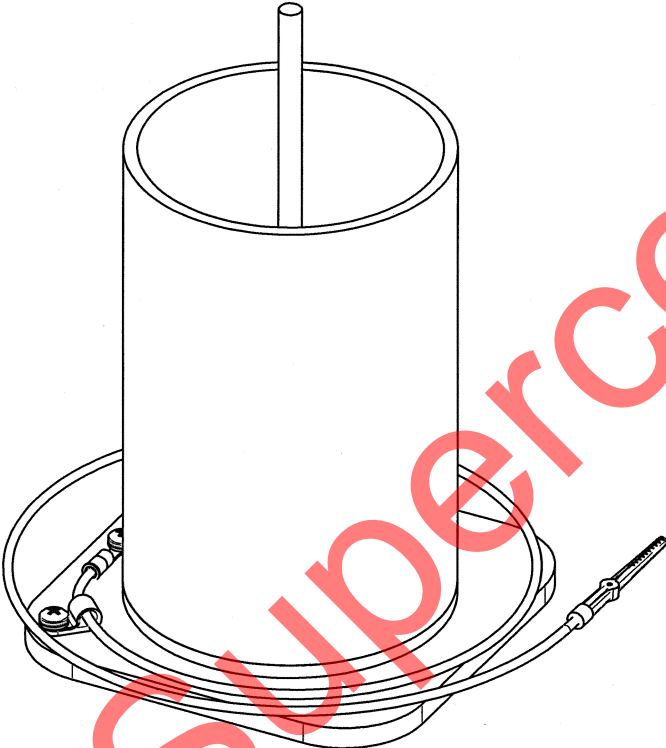


	8	7	6	5	4	3	2	1
	ITEM #	QTY	PART #	PART TITLE				
	-5	1	RBE000-117-5	ROD				
	-7	1	RBE000-117-7	TUBE				
	-11	1	RBE000-117-11	BASE PLATE ASSEMBLY				
	-13	1	RBE000-117-13	PLATE ASSEMBLY				
D	14	1	McMaster#9192K1 OR EQUIV.	14 WIRE GAUGE CONTINUOUS FLEX COPPER WIRE 35A CURRENT X 600V AC VOLTAGE				
	15	1	McMaster#7856K75 OR EQUIV.	PLASTIC HEAT SHRINK TUBING 0.25" ID. BEFORE HEATING X 25' LG.				
	16	1	McMaster#8429T37 OR EQUIV.	NYLON INSULATED RING TERMINAL FOR 1.5-2.5 mm <sup>2</sup> WIRE SIZE X M5 SCREW				
	17	1	McMaster#8876T13 OR EQUIV.	NYLON PLASTIC LOOP CLAMP 1/4" ID. X 13/16" LG.				
	18	1	McMaster#7236K252 OR EQUIV.	STEEL ALLIGATOR CLIP 20-14 WIRE GAUGE X 10A CURRENT				
	19	1	McMaster#9464K173 OR EQUIV.	VITON O-RING 3-3/4" ID. X 4-1/8" OD. X 3/16" WD.				
	20	2	McMaster#90273A559 OR EQUIV.	ZINC PLATED STEEL PHILLIPS FLAT HEAD SCREW 1/4"-28 X 3/4" LG. X 82° CSK.				
	21	2	McMaster#91166A240 OR EQUIV.	ZINC PLATED STEEL WASHER 5.3 mm ID. X 10.0 mm OD. X 0.9-1.1 mm THK.				
	22	2	McMaster#92005A318 OR EQUIV.	ZINC PLATED STEEL PAN HEAD PHILLIPS SCREW M5 X 0.8 mm X 8 mm LG.				
C	<div></div> <div>RBE000-117 FUEL SUMP DRAIN TOOL</div> <div>13</div>							
	<div>NOTES:</div> <div>1) MATERIAL: N/A</div> <div>2) HEAT TREAT: N/A</div> <div>3) FINISH:</div> <div>4) TOLERANCES: X.X = +/- 0.1" / +/- 1°</div> <div>X.XX = +/- 0.01" / +/- 0.5°</div> <div>X.XXX = +/- 0.005" / +/- 0.1°</div> <div>X.XXXX = +/- 0.0005" / +/- 0.05°</div> <div>PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"</div> <div>5) UNITS: INCHES UNLESS OTHERWISE NOTED</div> <div>6) IDENTIFICATION: N/A</div> <div>7) ASSEMBLE AS SHOWN</div> <div>8) APPLY MOLYKOTE 55 OR EQUIVALENT ON ITEM 19 THEN ASSEMBLE WITH ITEM -13, AND REMOVE EXCESS</div> <div>9) CUT ITEM 14 TO 12' ± 1"</div> <div>10) CUT ITEM 15 TO 12.5' ± 1"</div> <div>11) HEAT ITEM 15 IN POSITION ALONG ITEMS 14, 16, AND 18</div> <div>12) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEMS 20, 22 &amp; -5 THEN ASSEMBLE WITH ITEMS -11 &amp; -13, AND REMOVE EXCESS</div> <div>13) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG</div>							
	<div>UPDATED DRAWING TEMPLATE</div> <div>ADDED ITEMS -11 AND -13</div> <div>REPLACED ITEM -3 WITH ITEM -11 IN TOP LEVEL ASSEMBLY</div> <div>REPLACED ITEM -9 WITH ITEM -13 IN TOP LEVEL ASSEMBLY</div> <div>ITEM 15 WAS MCMaster-CARR#7132K111 IS McMaster#7856K75 OR EQUIV.</div> <div>ITEM 16 WAS MCMaster-CARR#7113K341 IS McMaster#8429T37 OR EQUIV.</div> <div>ITEM 18 WAS MUELLER ELECTRIC #BU-654-0 IS McMaster#7236K252 OR EQUIV.</div> <div>-3 DIM WAS M5 X .8 mm THRU IS TAP FOR M5 X 0.8 HELICOIL INSERT THRU. DIM WAS √ ∅0.516 X 82° IS √ ∅ 0.507 X 82.0°</div> <div>-5 DIM WAS 5/16-24 UNF IS 1/4-28 UNF. DIM WAS 0.355 IS 0.38. ADDED 0.31 AND MIN THREAD RELIEF DIMS, MATERIAL CHANGED FOR SS</div> <div>-7 DIM WAS ∅4.500 IS ∅4.50 REF. DIM WAS ∅4.125 IS ∅4.13 REF. ADDED COUNTERBORE HOLE ∅4.181+0.003/-0.000 ∇ 0.450</div> <div>-9 MODIFIED O-RING GROOVE. DIM WAS ∅4.125 IS ∅4.178+0.000/-0.003. DIM WAS ∅3.725 IS ∅3.836+0.000/-0.008. DIM WAS 0.21 IS 0.28+0.01/-0.00. ADDED 0.08 DIM. DIM WAS 5/16-24 UNF X .44 IS TAP FOR 1/4-28 UNF HELICOIL INSERT ∇ 0.446. REMOVED 1/4-28 UNF X 7/16 DIM</div>					19-634		
	REV.	DESCRIPTION				ECN #	BY	
	DESIGN	KPT	DART AEROSPACE LTD					
	DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA					
	CHECKED	KPT	TOOL PART #				REV. C	
	MFG. APPR.	DP	RBE000-117				SHEET 1 OF 8	
	APPROVED	VP	TITLE				SCALE	
			FUEL SUMP DRAIN TOOL				NTS	
	DATE	3/12/2019				COPYRIGHT © 2019 BY DART AEROSPACE LTD		
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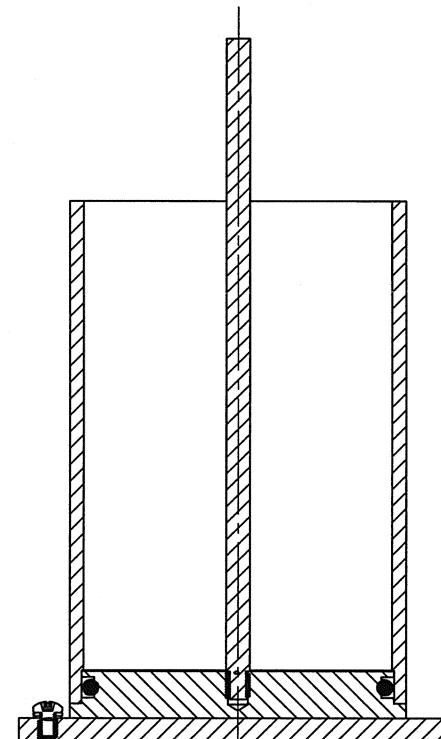
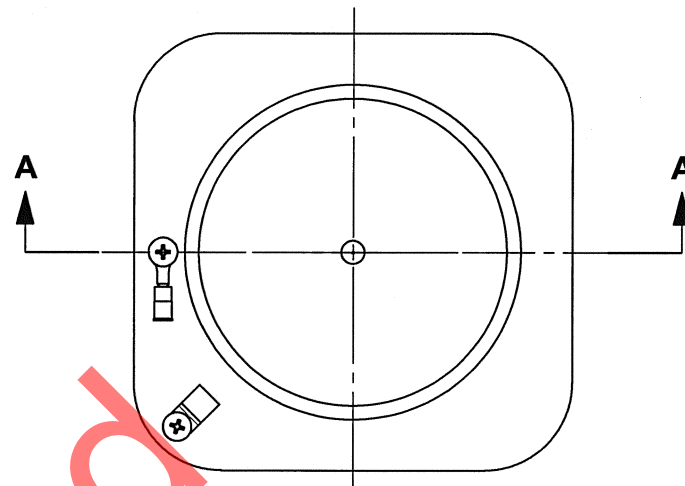
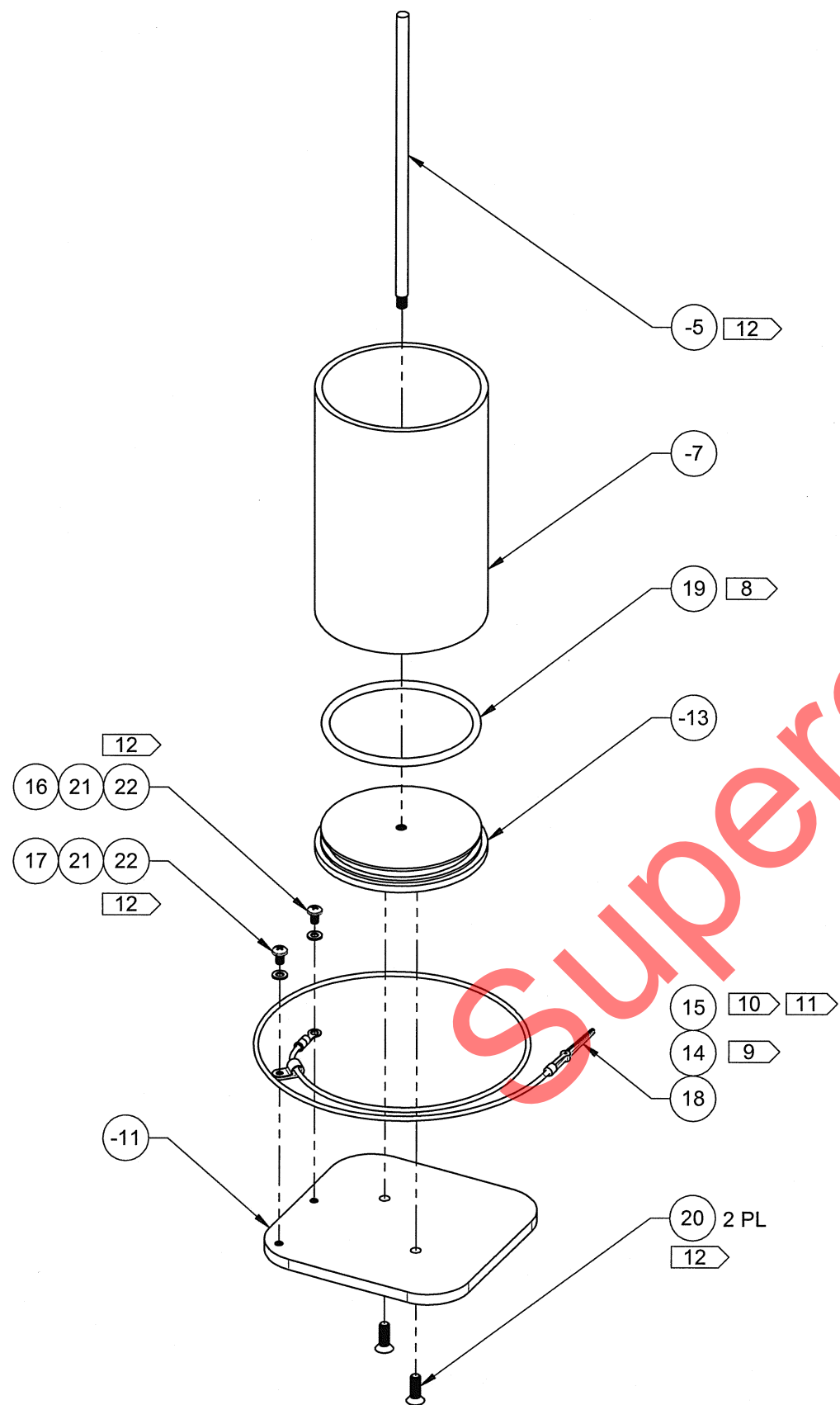
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**SECTION A-A**  
(ITEMS 14, 15, AND 18  
HIDDEN FOR CLARITY)

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	RBE000-117	SHEET 2 OF 8
APPROVED		TITLE	SCALE
		FUEL SUMP DRAIN TOOL	NTS 
DATE 3/12/2019		COPYRIGHT © 2019 BY DART AEROSPACE LTD	
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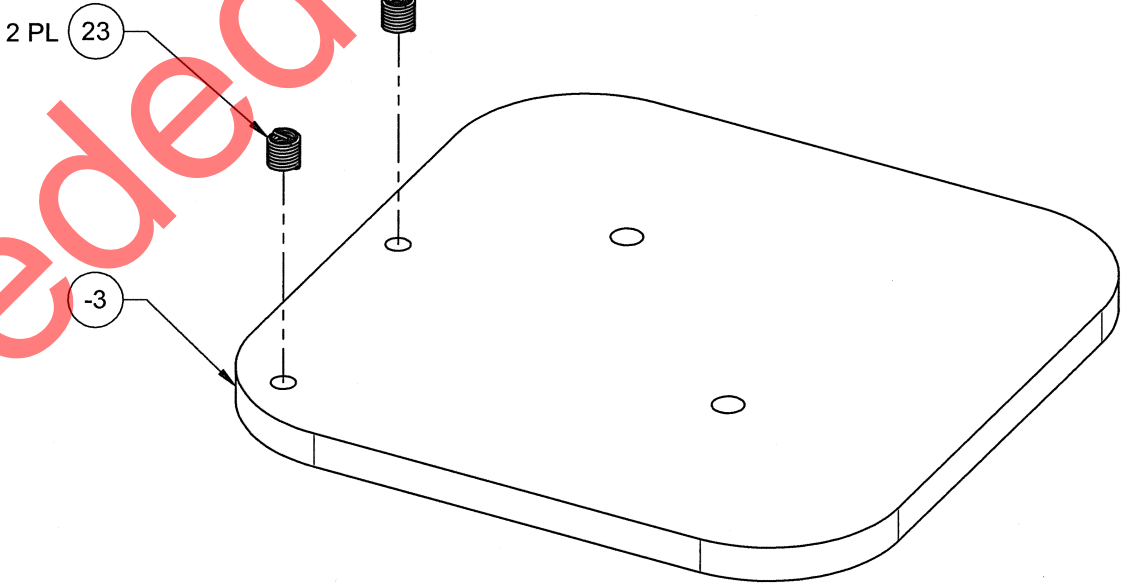
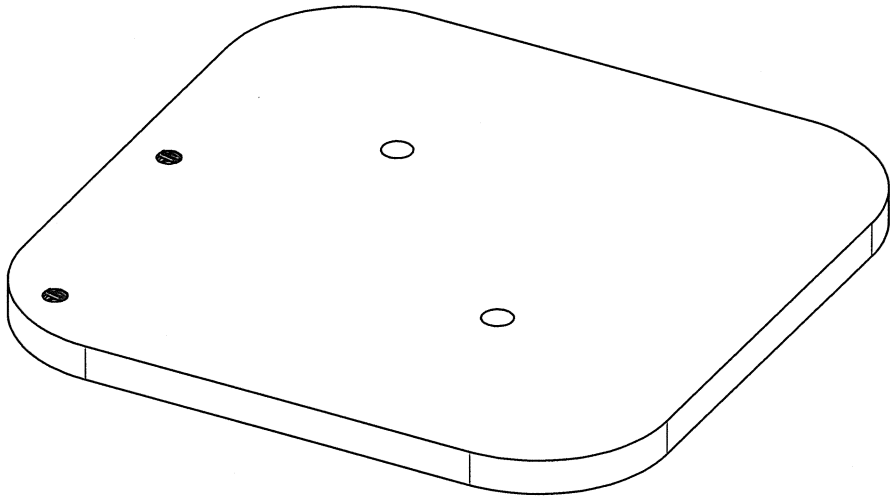
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ITEM #	QTY	PART #	PART TITLE
-3	1	RBE000-117-3	BASE PLATE
23	2	McMaster#91732A261 OR EQUIV.	18-8 SS HELICAL INSERT M5 X 0.8 mm X 7.5 mm LG.



RBE000-117-11 BASE PLATE ASSEMBLY

NOTES:  
1) MATERIAL: N/A  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) IDENTIFICATION: N/A  
7) ASSEMBLE AS SHOWN

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	RBE000-117	SHEET 3 OF 8
APPROVED	W	TITLE	SCALE
DATE 3/12/2019		FUEL SUMP DRAIN TOOL	NTS
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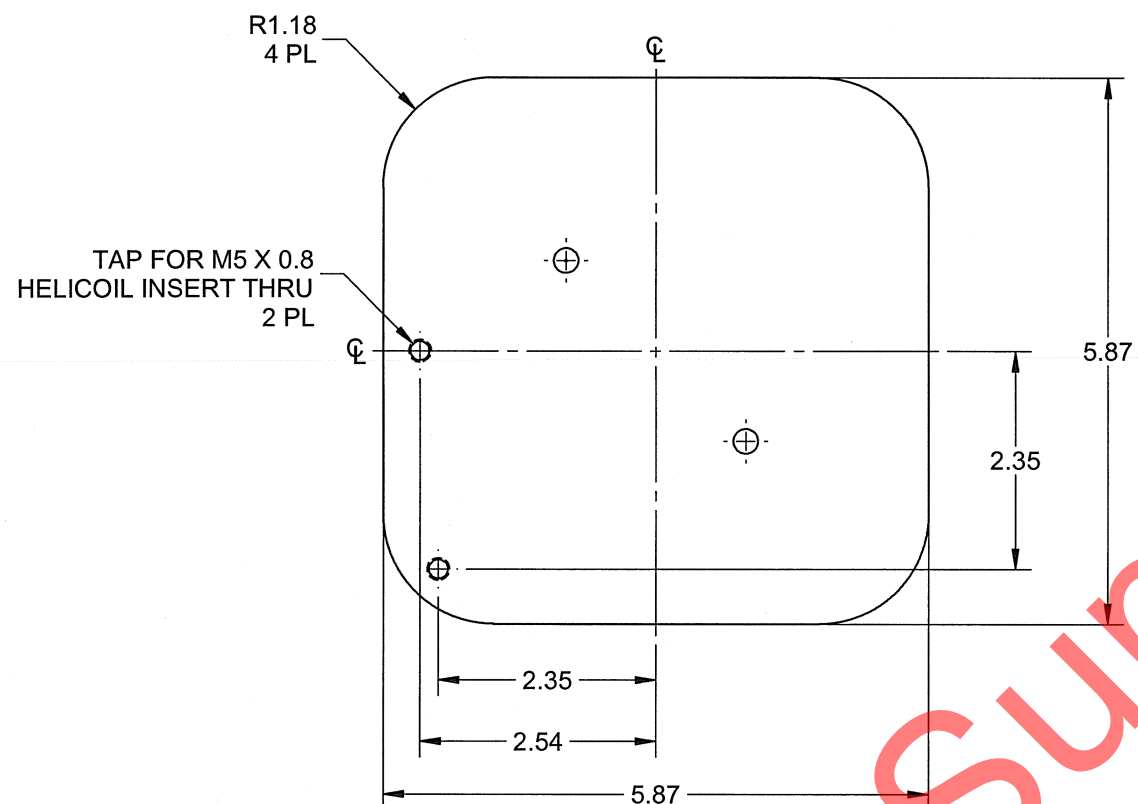
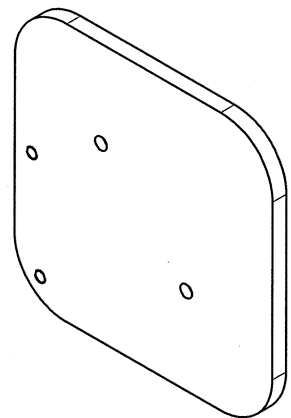
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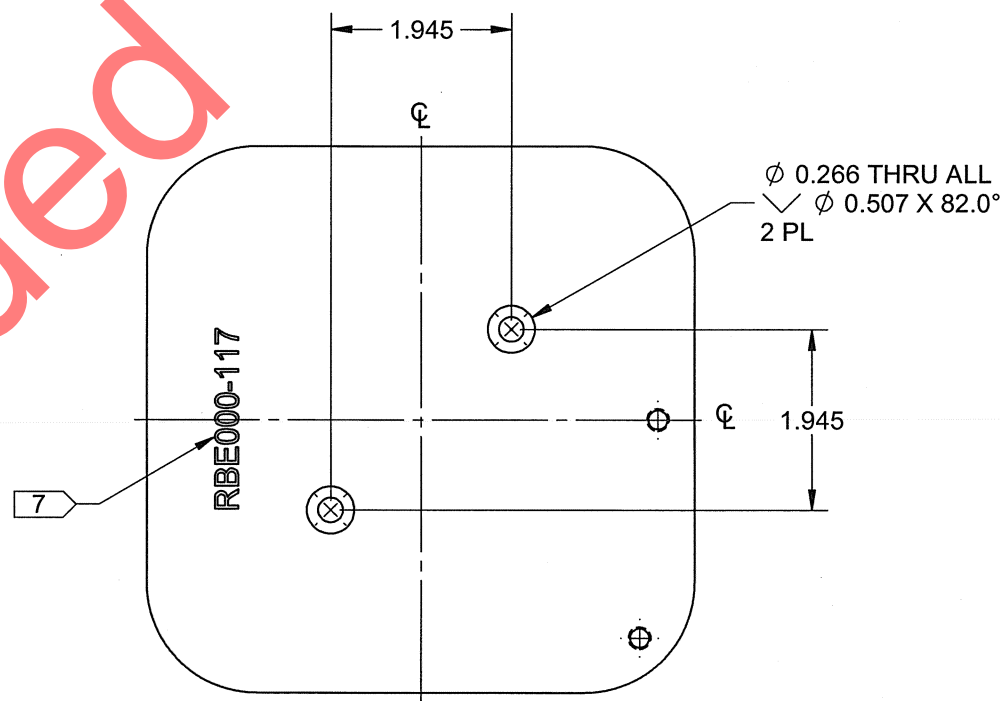
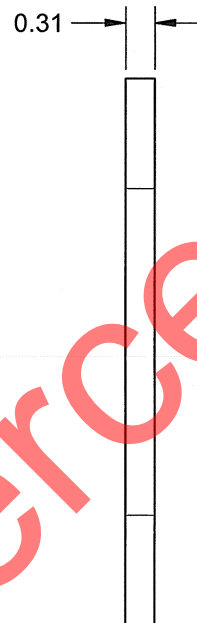
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**RBE000-117-3 BASE PLATE**



NOTES:

- 1) MATERIAL: 6061-T6 / 7075-T6
- 2) HEAT TREAT: N/A
- 3) FINISH: ANODIZE RED PER MIL-A-8625 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: MACHINE ENGRAVE OR DOT MARK T/N AS SHOWN

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	<b>RBE000-117</b>	SHEET 4 OF 8
APPROVED	WY	TITLE	SCALE
		<b>FUEL SUMP DRAIN TOOL</b>	NTS
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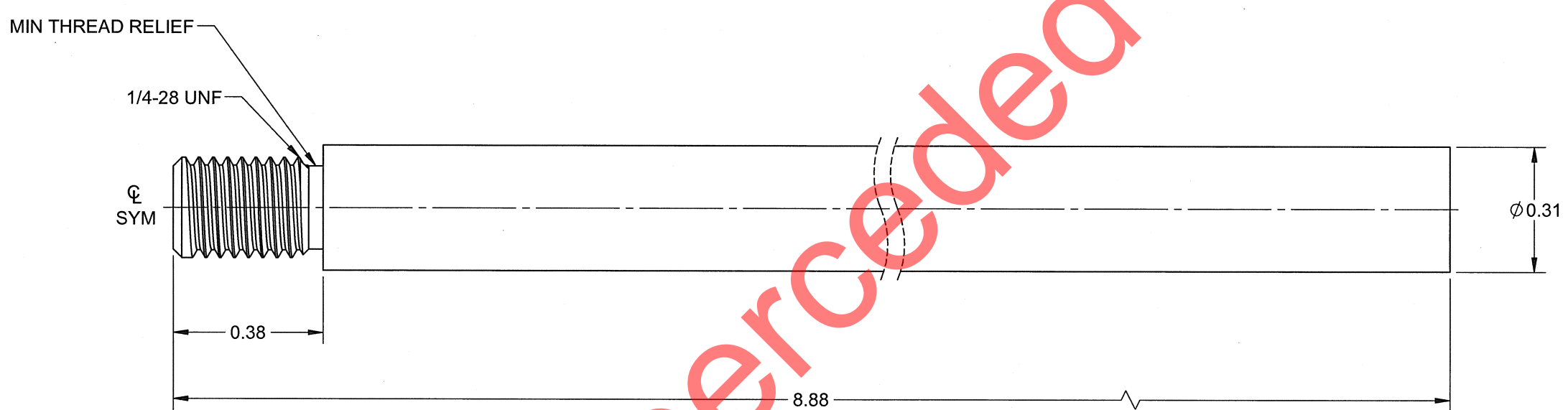
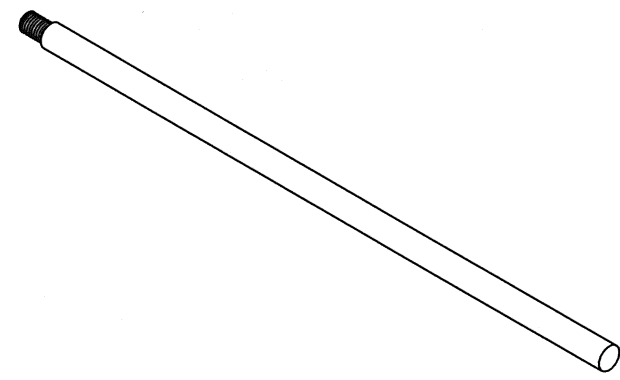
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**RBE000-117-5 ROD**

NOTES:  
1) MATERIAL: 303/304/316 STAINLESS STEEL  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A

DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	RBE000-117	SHEET 5 OF 8
APPROVED	VK	TITLE	SCALE
		FUEL SUMP DRAIN TOOL	NTS
DATE	3/12/2019	COPYRIGHT © 2019 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



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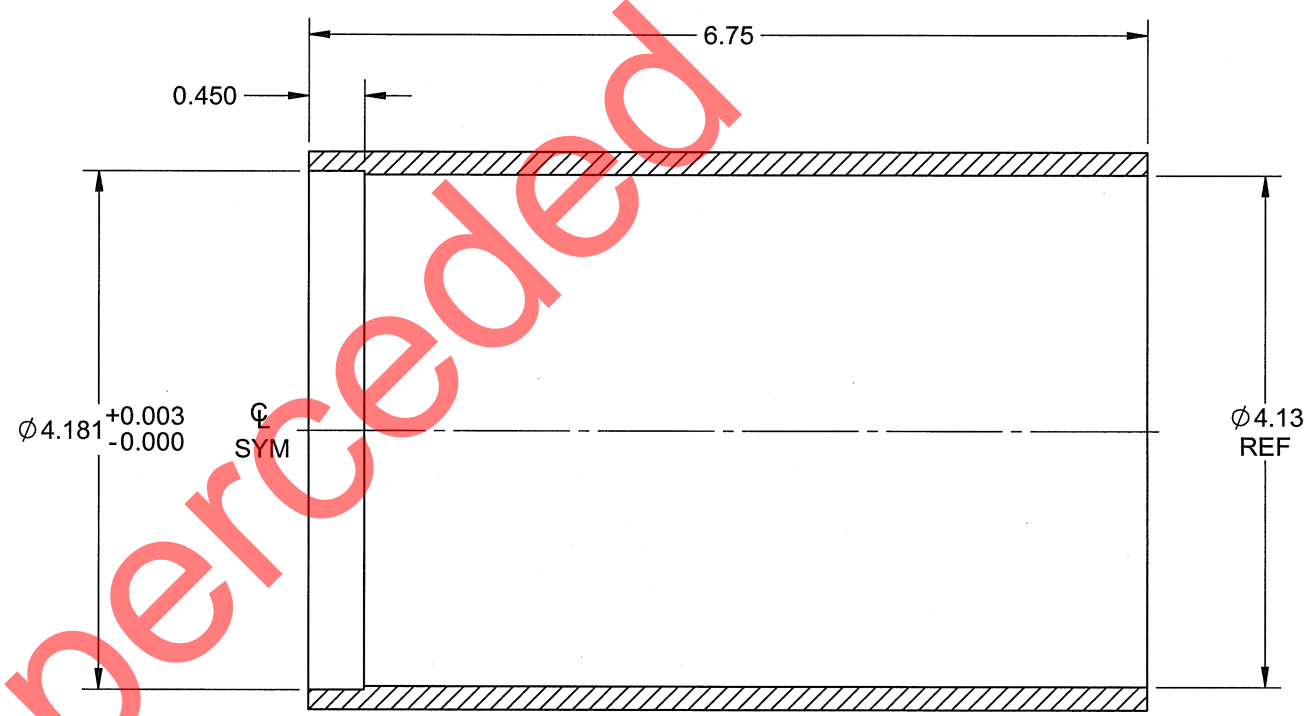
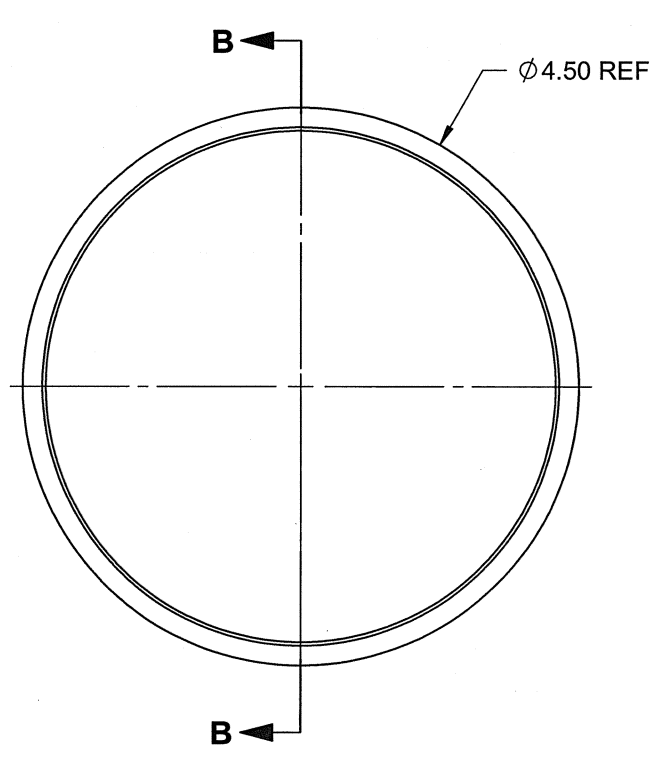
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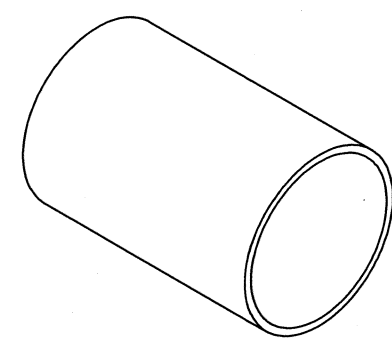
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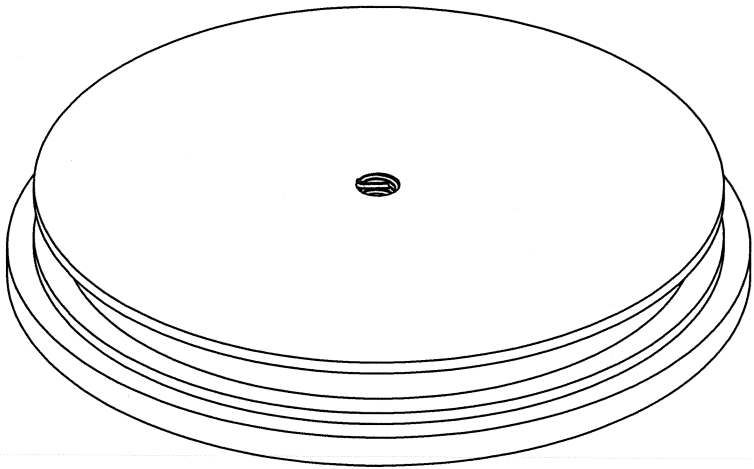
**SECTION B-B**



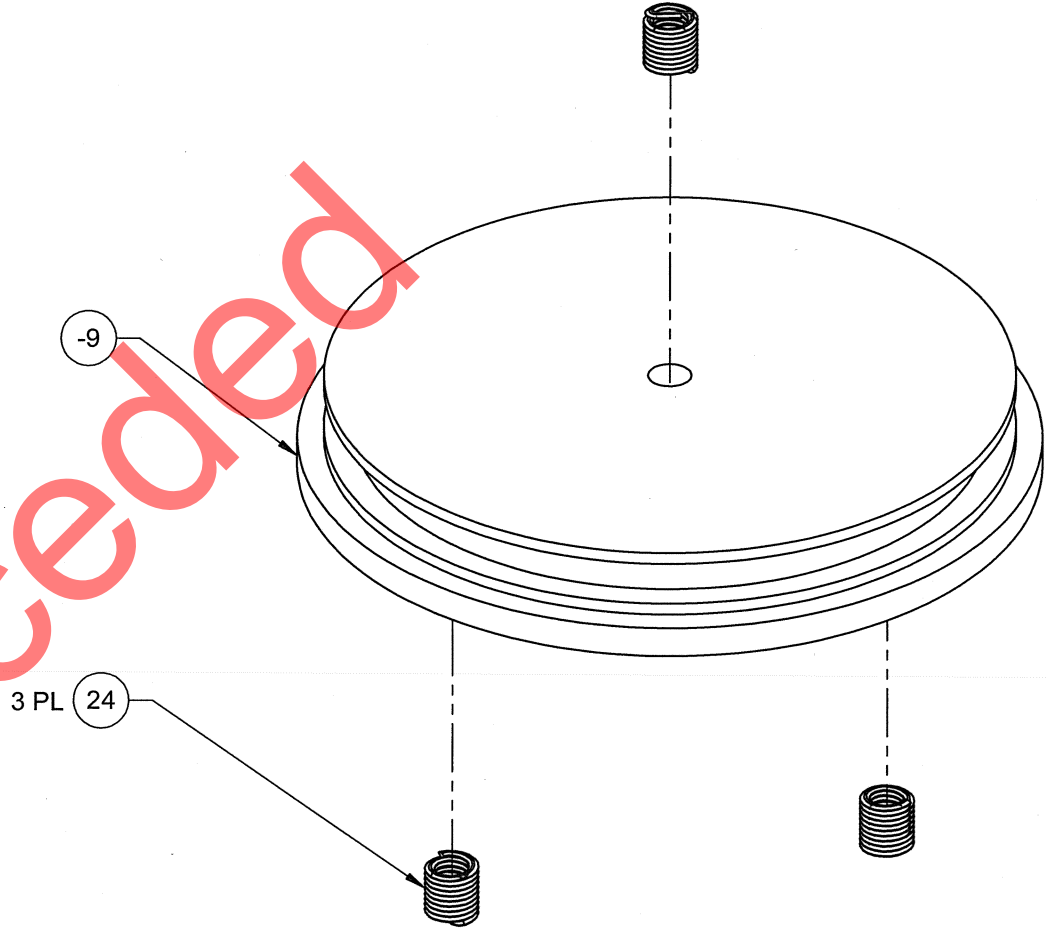
NOTES:  
1) MATERIAL: McMaster#8486K481 OR EQUIV. (CLEAR CAST ACRYLIC TUBE 4-1/8" ID. X 4-1/2" OD.)  
2) HEAT TREAT: N/A  
3) FINISH: N/A  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
                  X.XX = +/- 0.01" / +/- 0.5°  
                  X.XXX = +/- 0.005" / +/- 0.1°  
                  X.XXXX = +/- 0.0005" / +/- 0.05°  
                  PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A

DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	RBE000-117	SHEET 6 OF 8
APPROVED	VH	TITLE	SCALE
DATE	3/12/2019	FUEL SUMP DRAIN TOOL	NTS
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ITEM #	QTY	PART #	PART TITLE
-9	1	RBE000117-9	PLATE
24	3	McMaster#91732A232 OR EQUIV.	18-8 SS HELICAL INSERT 1/4"-28 X 3/8" LG.



**RBE000-117-13 PLATE ASSEMBLY**



- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: N/A
  - 7) ASSEMBLE AS SHOWN

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	<b>RBE000-117</b>	SHEET 7 OF 8
APPROVED	VHP	TITLE	SCALE
DATE	3/12/2019	<b>FUEL SUMP DRAIN TOOL</b>	NTS
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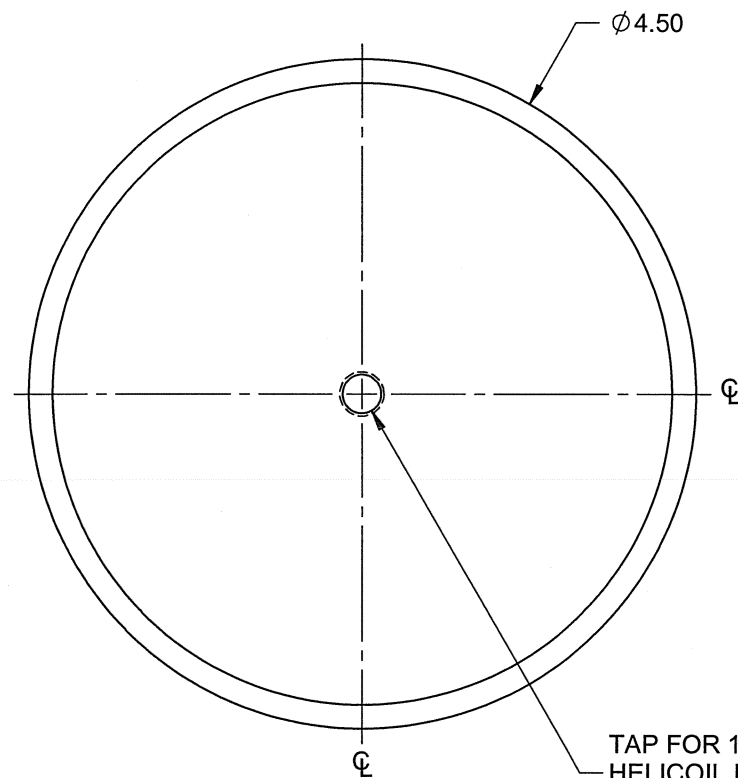
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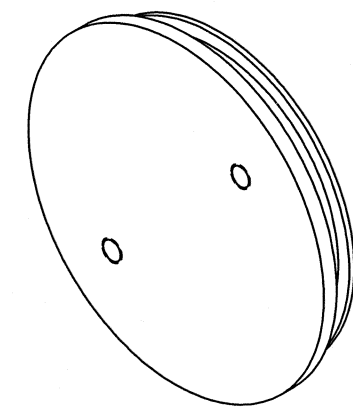
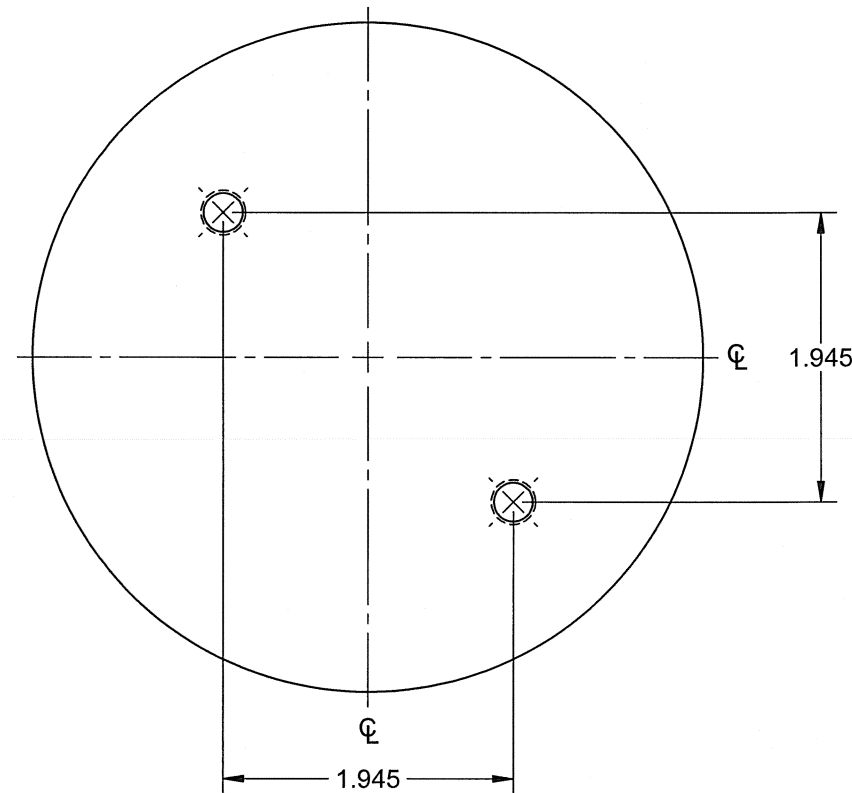
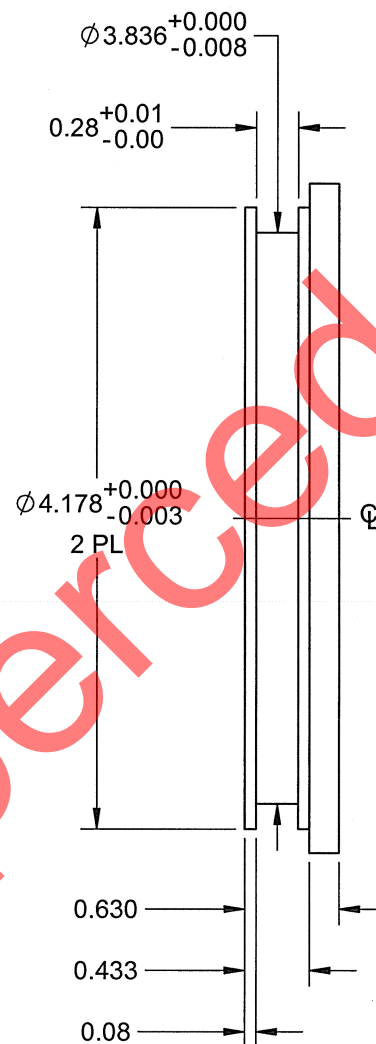
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**RBE000117-9 PLATE**

TAP FOR 1/4-28  
HELICOIL INSERT  $\nabla$  0.446  
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**NOTES:**

- 1) MATERIAL: 6061-T6 / 7075-T6
- 2) HEAT TREAT: N/A
- 3) FINISH: ANODIZE RED PER MIL-A-8625 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X =  $\pm 0.1"$  /  $\pm 1^\circ$   
X.XX =  $\pm 0.01"$  /  $\pm 0.5^\circ$   
X.XXX =  $\pm 0.005"$  /  $\pm 0.1^\circ$   
X.XXXX =  $\pm 0.0005"$  /  $\pm 0.05^\circ$   
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES =  $\pm 0.005"$
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	DP	<b>RBE000-117</b>	SHEET 8 OF 8
APPROVED		TITLE	SCALE
		<b>FUEL SUMP DRAIN TOOL</b>	NTS
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